

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 0 940 345 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
08.09.1999 Bulletin 1999/36

(51) Int. Cl.⁶: **B65D 5/50, B65D 5/68**

(21) Application number: 99301489.3

(22) Date of filing: 04.03.1999

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(72) Inventor: **Hurt, Paul**
Lockerbie DG11 2BL (GB)

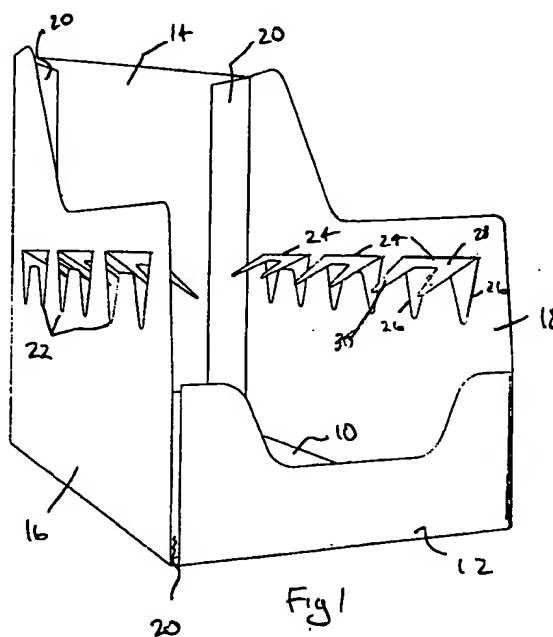
(74) Representative:
Swindell & Pearson
48 Friar Gate
Derby DE1 1GY (GB)

(30) Priority: 05.03.1998 GB 9804532

(71) Applicant:
David S. Smith Packaging Limited
Warwickshire CV21 1HL (GB)

(54) Carton with product dividers

(57) A carton comprises an open topped tray close-able by a lid located within the tray, the tray having a series of flaps (28), each having a pair of prongs (30) directed towards the base of the tray, hinged at their upper ends to the tray sides (16, 18) and the lid having a series of apertures corresponding in their spacing to the flaps (28) so that when the lid is lifted the prongs (30) engage the apertures and are hinged upwardly to project into the tray to provide product dividers.



Description

[0001] The present invention concerns improvements in or relating to cartons provided with product dividers.

[0002] Cartons in which products are stored and transported are often used to display the product on a supermarket shelf after the carton has been opened. Certain products tend to collapse from their stacked storage position as the carton is emptied, for example a carton containing a horizontally disposed stack of relatively thin products, for example sachets, bags or thin boxes, is capable of neatly displaying the product with full visibility when the carton is filled or nearly filled with product but as sachets are removed from the front of the carton the remaining sachets tend to slide away from the vertical or fall over, often face downwards, thus destroying the visual impact of the display and, as a result, perhaps reducing sales of the product.

[0003] Assembled cartons come in many different forms. In a simple form the carton is of rectangular prismatic shape and it is opened to display the product by using a knife to cut off a top section of the carton. A more preferable alternative is a two part carton comprising a tray with a removable lid fitted over or around the tray. In a modification of the tray and removable lid carton, the lid is hinged by one of its edges to a corresponding edge of the tray. Lids of this nature are often known as hoods but in the present specification the term lid is intended to define any carton part which co-operates with a tray part to provide an assembled carton for storage and transportation purposes.

[0004] According to the present invention there is provided a carton comprising a tray and a co-operating lid adapted for fitment within the tray to close the tray, in which a pair of opposed sides of the tray have cuts formed therethrough outlining a flap hinged to the side about its upper edge, the flap defining at least one prong directed away from the upper edge and in which the lid has apertures formed through a pair of opposing sides at locations which correspond to the prongs of the flaps such that end regions of the prongs project through the apertures when the lid is fitted whereby on removing the lid from the tray, engagement of the prongs with the edge of the related apertures causes the flaps to pivot upwardly so that the prongs provide dividers projecting across the interior of the carton when the lid has been removed.

[0005] Preferably each side of the carton is provided with a plurality of flaps and the lid is provided with a corresponding plurality of apertures.

[0006] Preferably each flap includes two prongs.

[0007] Preferably each prong is provided with a crease, which is substantially parallel to the hinge line of the flap, near its free end.

[0008] Preferably the spacing between the prongs of each flap corresponds to the thickness of one or a predetermined number of products to be contained within the carton.

[0009] Preferably the front of the carton is lower than to the sides including the flaps. Preferably the lid is completely removable from the tray. Alternatively it may be hinged at its, in use, rear edge to the top of the front or rear, of the tray.

[0010] Preferably the front of the lid, when fitted to the tray extends below the top of the front of the tray.

[0011] Preferably the sides of the tray including the flaps are cut back at their front top corner region.

[0012] In an another embodiment the front of the tray has an upward extension forming the front of the lid, the respective fronts of the tray and lid being separated by a cut line and the lid being attached to the front edges of the sides of the tray including the flaps by perforations.

[0013] Embodiment of the present invention will now be described by way of example only with reference to the accompanying drawings in which:-

Fig.1 shows a perspective view, from the front and one side, of a tray of a carton;

Fig. 2 shows a perspective view in the same direction but from a different angle of the tray with a lid fitted thereto;

Fig. 3 shows a perspective view of the carton and lid assembly from the front and the other side with the lid partially removed from the tray;

Fig. 4 shows a partial view of a side of the tray;

Figs. 5 and 6 show blanks of, respectively, a tray and lid to be made up into the carton illustrated in Figs. 1 to 3;

Figs. 7 and 8 show respectively blanks for a modified tray and lid; and

Fig. 9 shows a blank for a tray and lid assembly with the lid formed integrally with the tray.

[0014] A carton which is intended to carry a horizontal, single layer, stack of sachets (not shown) comprises a tray having a rectangular base 10, a lower front 12, a raised rear 14 and side walls 16, 18, the front, rear and side walls being attached to the base 10 along fold lines and having end lugs 20 hinged thereto by which, with the use of adhesive, staples or other fixing means, the tray can be assembled into an open-topped container by any known erection technique, either on a machine or by hand.

[0015] Each side 16, 18 has cuts 22 formed therethrough, the cuts taking the form of a "W". A crease 24 is formed between the upper ends of the outer cuts 26, thereby providing a bifurcated flap 28 having a pair of spaced prongs 30, the spacing between the prongs being predetermined and being equivalent to the thickness of either one sachet to be stored in the carton or a

multiple of sachets. A crease 31 (Fig. 4) is formed across each prong, near its free end, the crease 31 being parallel to the crease 24.

[0016] It will be apparent from Fig. 1 that if the flaps 28 are folded inwardly about the creases 24, the prongs 30 will provide partitions extending into the carton tray against which products can rest, thereby holding the products in an upright condition.

[0017] It will be further appreciated that, if necessary, the flaps can be folded back into the sides 16, 18 after the product has been removed. Removal of products is facilitated by cutting back the front top corner regions of the sides 16, 18. The front 12 is given as low a height as possible so that, on the one hand, it retains products within the tray but, on the other, displays as much of the front of a product as possible.

[0018] The second part of the carton of the present invention is a lid 40 which is illustrated in its transport and storage condition in which it combines with the tray to provide an enclosed carton. The lid comprises an open bottomed rectangular prism which, in the example shown, is substantially open at its front apart from two edge strips 42 which retain the product within the enclosed carton but at the same time display the carton's contents.

[0019] The sides 46, 48 of the lid are provided with a plurality of apertures 50 therethrough, the position and size of each aperture corresponding to the prongs 30 of the flaps 28 and, as can be seen on close inspection of the right hand wall illustrated in Fig. 2, when assembled, the lower tips of the prongs 30 extend just below the lower edge of the apertures 50. The prongs are deformed by the application of a transverse force into this position, deformation being facilitated by the creases 31.

[0020] Conveniently, the lid can have a vertical crease line formed mid-way along its sides 46, 48 and a corresponding cut 49 (not shown) is formed in the top of the lid between the upper ends of the fold lines 52. An inverted V-shaped cut back 54 is formed at the bottom end of each crease 52 as illustrated in Figs. 3 and 6. Finger holes 55 are formed in the top 53 of the lid by flaps.

[0021] When the container, full of product, arrives at the point of sale, to enable the product to be displayed while still in the tray, the lid 40 is removed by pulling it upwardly away from the tray. Engagement of the lower edges of the apertures 50 with the prongs passing therethrough causes the flaps 28 to pivot upwardly as the lid is being removed and when the lid has been removed the flexibility of the material forming the carton results in the flaps pivoting downwardly to a near horizontal position in which position they act as partitions between products, holding the products in their stacked condition. As products are removed from the front of the carton by purchasers, the tendency for the stack to slip or individual products to fall over onto their face is mitigated by engagement of the prongs 30 with sides of the

products.

[0022] The material from which the carton is manufactured, by any suitable known manufacturing technique, is suitable corrugated paper, for example single walled, corrugated paper having N,F,E or B flutes. Alternatively it may be manufactured from carton board, sheet plastic materials or any other suitable sheet material.

[0023] The overall configuration of the carton, and more particularly the construction and assembly of the tray and lid, does not form part of the present invention but there are a number of ways of producing cartons and lids, for example:-

(a) Lids and trays erected by machine as illustrated in Figs. 1 to 3.

(b) The tray may be formed according to the crash lock principle, glued or hand erected with a separate lid which could be glued or unglued.

(c) The tray could be erected by hand with a separate lid which could be glued or unglued.

[0024] The tray and lid in each of the above examples, are assembled either as two components, or as an initially single component, from a blank of corrugated paper or carton board.

[0025] Figs. 5 and 6 show the blanks from which the carton illustrated in Fig. 1 to 4 is erected.

[0026] Figs. 7 and 8 show a blank for a tray and lid respectively which, when manufactured, are assembled and then collapsed according to the crash lock technique. In Figs. 7 and 8 components of the lid and tray which are shared with the lid and tray illustrated in Figs. 1 to 6 have been given the same reference numerals. It will be appreciated, however, that the base 10 of the tray and the corresponding top of the lid are assembled from four flaps 90 hingedly attached respectively to the sides, front and back of the tray and lid in the well known crash lock manner.

[0027] Fig. 9 shows a blank of a composite tray and lid, where the tray is a similar configuration to that illustrated in Fig. 7 but is provided with a hinged flap 72 at the top of its rear. The lid has no rear wall but a front wall 74 which is effectively a continuation of the front 12 of the tray and is separated therefrom by a cut line 76. It has an aperture 78 providing a finger pull. The front 74 is separated from the sides 16, 18 by perforated lines 80, such that at point of use, the lid can be removed by inserting a figure through the aperture 78, pulling up the front wall 74 away from the tray to rupture the material along the perforated lines 80, this freeing the lid for removal. The rear edge 82 of the side walls 46, 48 are arcuate in shape to allow the container to be closed by the lid after it has been filled with products by pivoting the top and sides of the lid, about a fold line 84 at the top of the front wall 74.

[0028] Various other modifications can be made without departing from the scope of the invention, for example it may be possible to leave the rear products in the

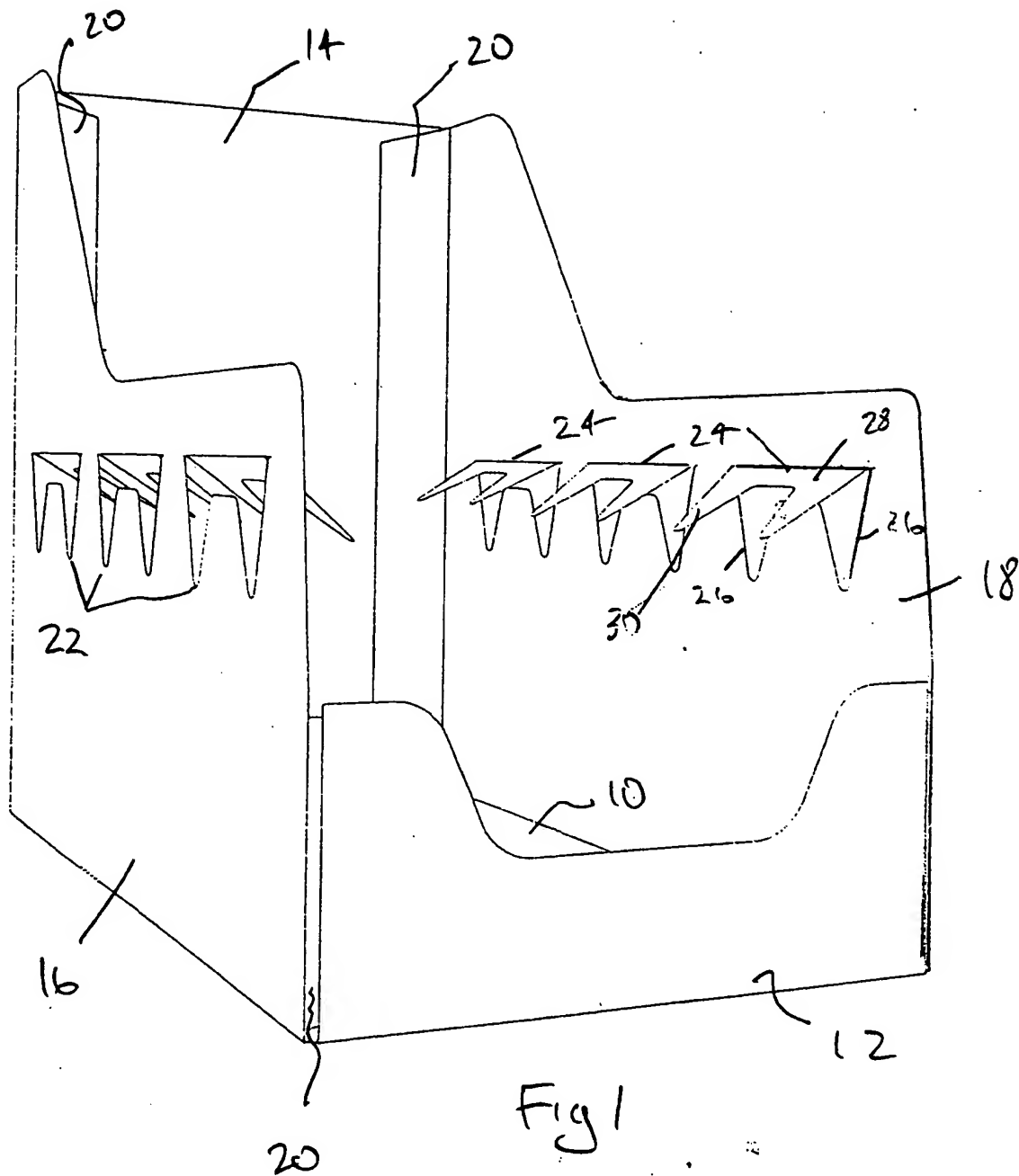
carton without support so that instead of having three flaps on each side, only the front two flaps may be employed. The flaps may be given a different configuration.

Claims

1. A tray and a co-operating lid adapted for fitment within the tray to close the tray, characterised in that a pair of opposed sides (16, 18) of the tray have cuts (22) formed therethrough outlining a flap (28) hinged to the side about its upper edge (24), the flap (28) defining at least one prong (30) directed away from the upper edge (24) and in that the lid (40) has apertures (50) formed through a pair of opposing sides (46, 48) at locations which correspond to the prong or prongs (30) of the flaps (28) such that end regions of the prongs project through the apertures (50) when the lid is fitted whereby on removing the lid from the tray, engagement of the prongs (30) with the edge of the related apertures (50) causes the flaps (28) to pivot upwardly so that the prongs (30) provide dividers projecting across the interior of the carton when the lid has been removed. 10 15 20 25
2. A carton as claimed in claim 1, characterised in that each side of the tray is provided with a plurality of flaps (28) and the lid is provided with a corresponding plurality of apertures (50). 30
3. A carton as claimed in claim 1 or claim 2, characterised in that each flap (28) includes two prongs (30).
4. A carton as claimed in any of claims 1 to 3, characterised in that each prong (30) is provided with a crease (31), which is substantially parallel to the hinge line (24) of the flap (28), near its free end. 35
5. A carton as claimed in claim 3 or claim 4, characterised in that the spacing between the prongs (30) of each flap (28) corresponds to the thickness of one or a predetermined number of products to be contained within the carton. 40 45
6. A carton as claimed in any preceding claim, characterised in that the front (12) of the tray is lower than the sides (16, 18) including the flaps (28).
7. A carton as claimed in any preceding claim, characterised in that the lid is completely removable from the tray. 50
8. A carton as claimed in any of claims 1 to 6, characterised in that the lid is hinged at its, in use, rear edge to the top of the front or rear, of the tray. 55
9. A carton as claimed in any preceding claim, charac-

terised in that the front of the lid, when fitted to the tray extends below the top of the front of the tray.

10. A carton as claimed in any preceding claim, characterised in that the sides (16, 18) of the tray including the flaps (28) are cut back at their front top corner region. 5
11. A carton as claimed in any of claims 1 to 10, characterised in that the front (12) of the tray has an upward extension (74) forming the front of the lid, the respective fronts of the tray and lid being separated by a cut line (76) and the lid being attached to the front edges of the sides of the tray including the flaps by perforations (80). 10 15 20 25



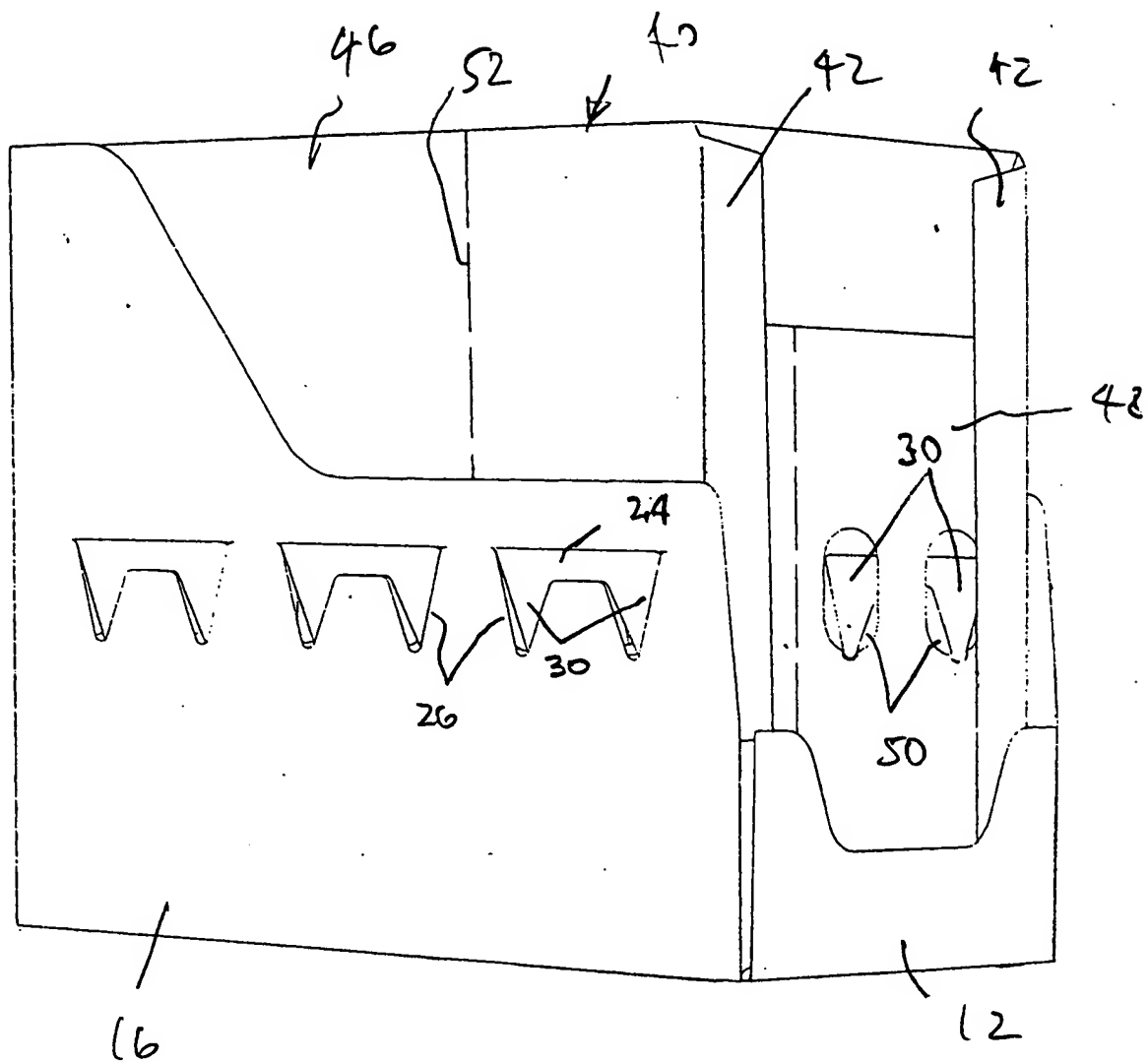
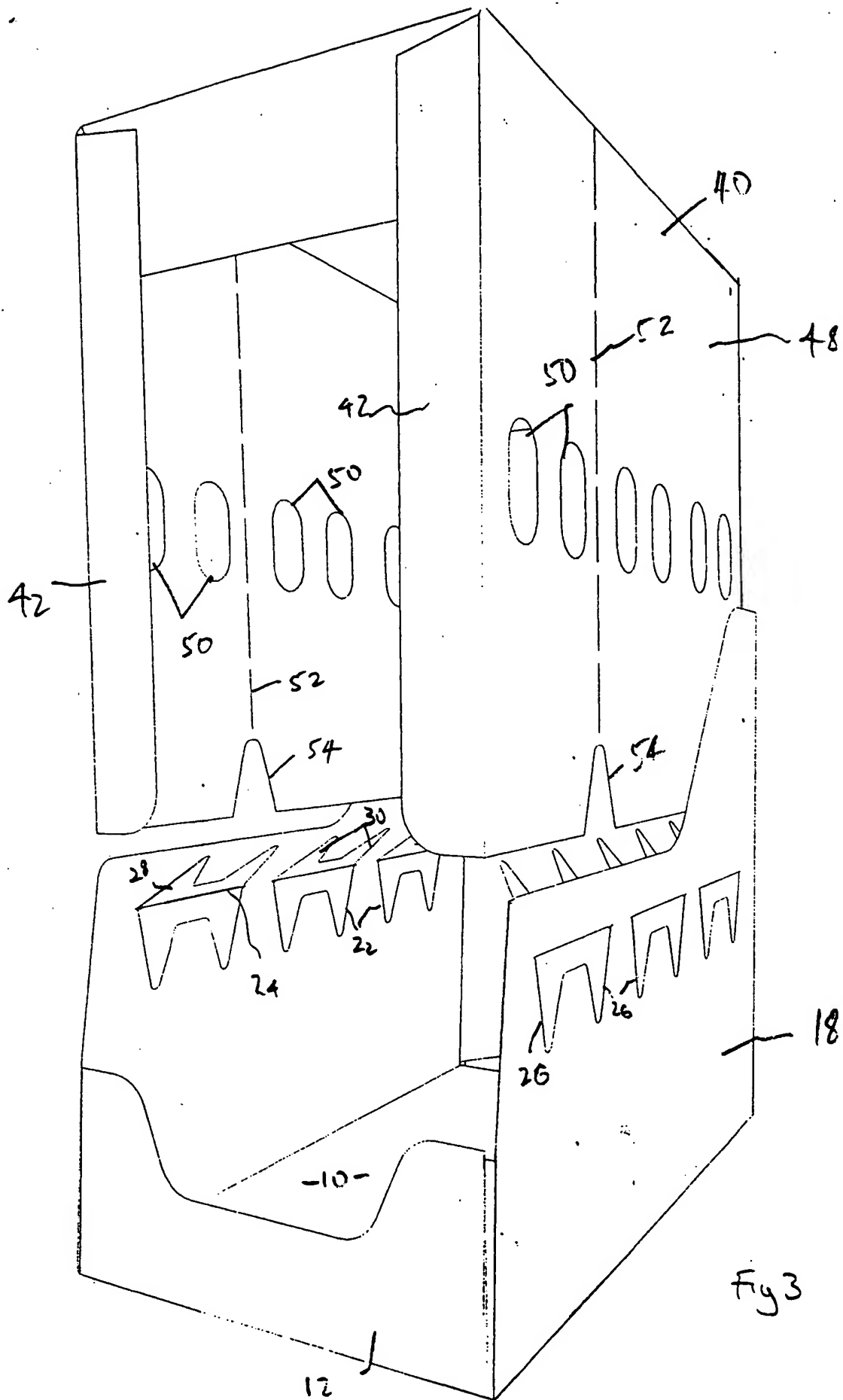
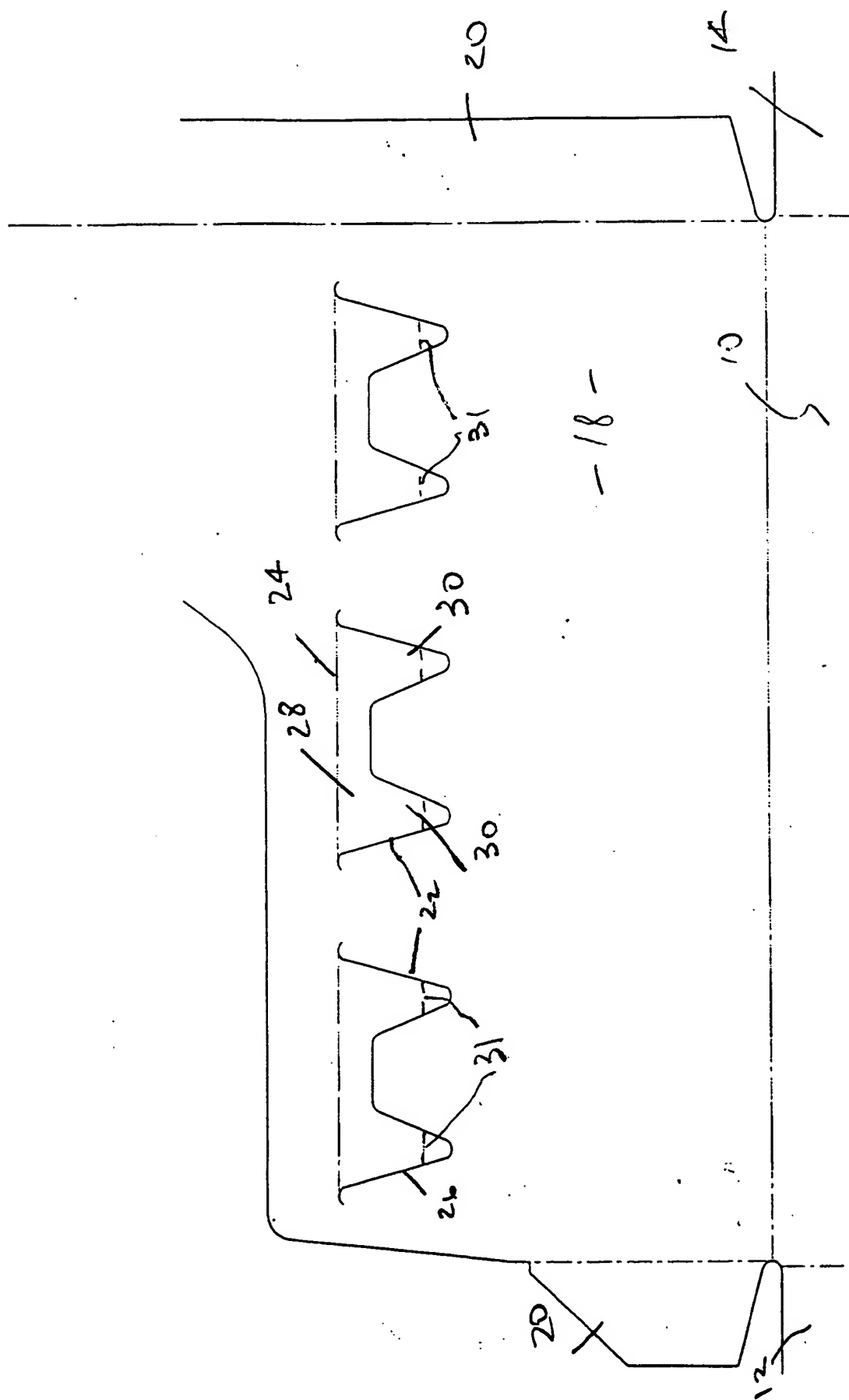
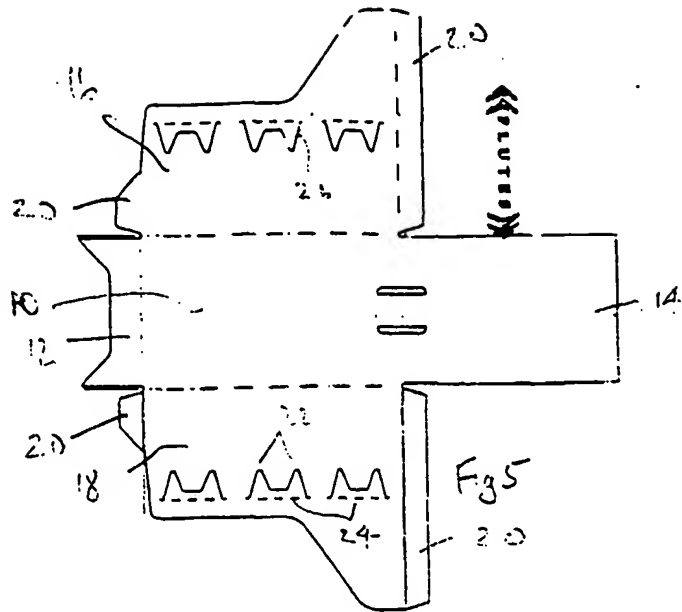


Fig 2

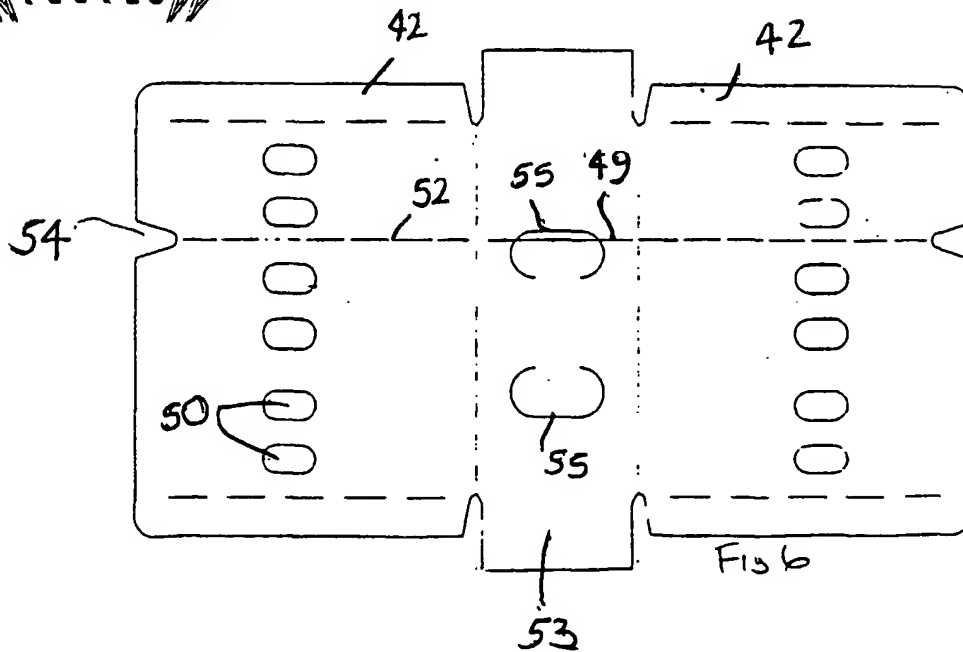


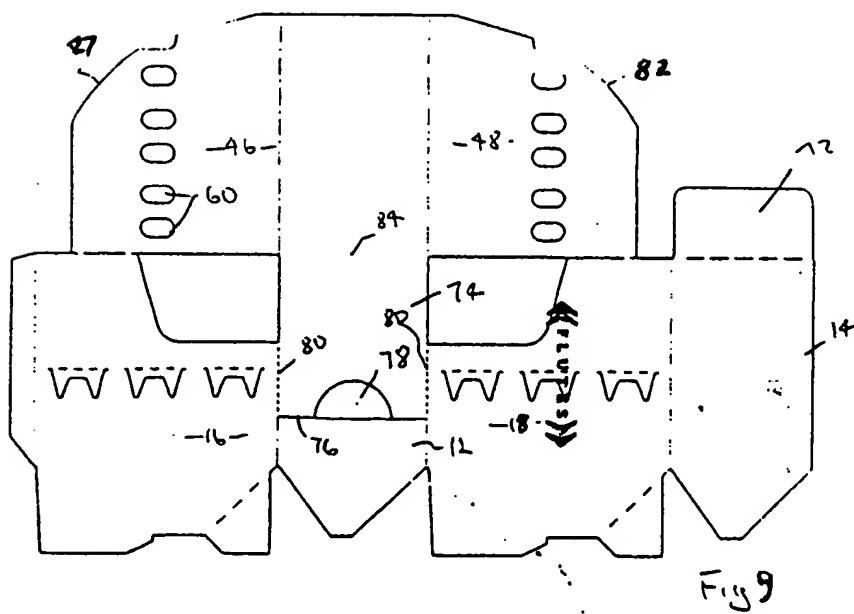
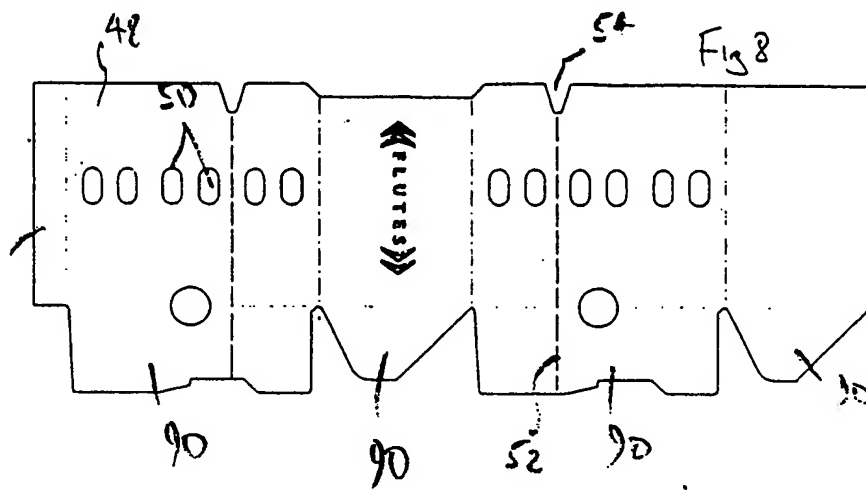
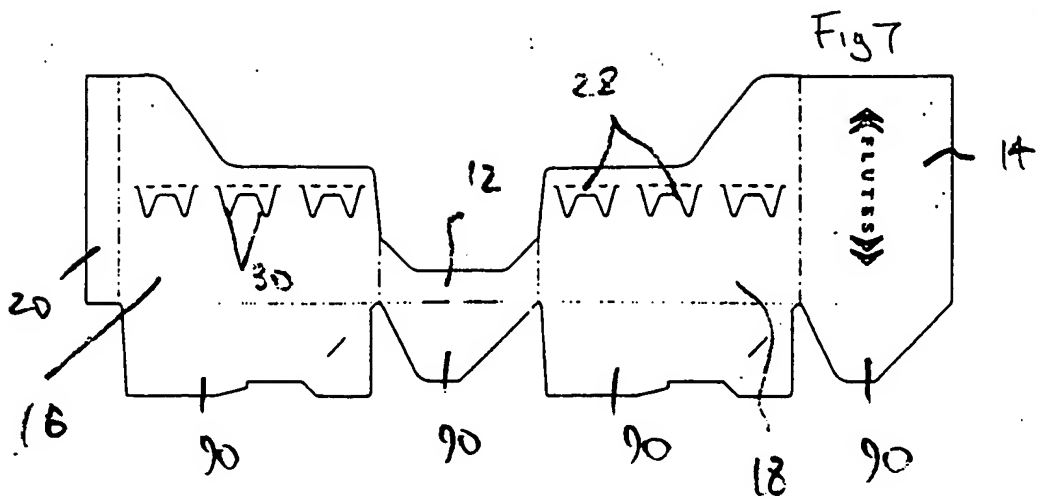


4
11



«FLUTES»







European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 30 1489

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	DE 36 43 805 A (HENKEL KGAA) 30 June 1988 * figures * ---	1,8	B65D5/50 B65D5/68
A	DE 44 12 095 A (HENKEL KGAA) 19 October 1995 * figures * ---	1	
A	US 4 542 847 A (LINDSTROM ROBERT O) 24 September 1985 * figures * ---	1	
A	DE 81 04 314 U (FRIEDRICH FREUND GBMH) 19 June 1981 * figures * ---	1	
A	US 2 018 824 A (H.WILKE) 29 October 1935 * figures * -----	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			B65D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 10 June 1999	Examiner Zanghi, A
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 30 1489

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10-06-1999

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 3643805	A	30-06-1988	NONE	
DE 4412095	A	19-10-1995	NONE	
US 4542847	A	24-09-1985	CA 1250547 A	28-02-1989
DE 8104314	U	19-06-1981	NONE	
US 2018824	A	29-10-1935	NONE	